

PHARMACEUTICAL TECHNOLOGY

1. The ability of a substance dissolves in a given solvent system is depends on
 - (a) Nature and intensity of the forces present in the solute
 - (b) Nature and intensity of the forces present in the solvent
 - (c) Interactions between solute and solvent
 - (d) All the above
2. Which of the following substances having poor water solubility
 - (a) Weak electrolytes
 - (b) Non-polar molecules
 - (c) Both
 - (d) None
3. The solubility of weak electrolytes & non-polar substances can be increased by adding water miscible solvents. This process is known as
 - (a) Co-solvency
 - (b) Complexation
 - (c) Both
 - (d) None
4. How co-solvents increase the solubility of poorly soluble drugs?
 - (a) By reducing the interfacial tension between the predominant aqueous solution and hydrophobic solute
 - (b) By reducing the interfacial tension between solute and solvent
 - (c) Both
 - (d) None
5. Which of the following co – solvents are used to increase the solubility of a drug
 - (a) Ethanol
 - (b) Sorbitol
 - (c) Glycerin
 - (d) All the above
6. Which of the following co – solvent is accepted as a co – solvent in parenteral products, but its use in oral liquids is limited
 - (a) Glycerol formal
 - (b) Glycerol
 - (c) Dimethyl acetamide
 - (d) None
7. Due to which factor, dimethyl acetamide is not been used as a co-solvent in oral liquids
 - (a) Due to objectionable odor
 - (b) Due to objectionable taste
 - (c) Both
 - (d) None
8. Thiomersal is belongs to which category preservative
 - (a) Acidic
 - (b) Neutral
 - (c) Mercurial
 - (d) Quaternary ammonium compounds

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9. Which of the following are widely used and excellent preservatives
 - (a) Mercurial
 - (b) Quaternary ammonium compounds
 - (c) Both
 - (d) Acidic
10. Benzalkonium chloride is categorized as
 - (a) Acidic preservative
 - (b) Neutral preservative
 - (c) Mercurial preservative
 - (d) Quaternary ammonium compounds
11. At which concentration, phenol act as preservative
 - (a) 0.2 – 0.5
 - (b) 0.5 – 0.8
 - (c) 0.05 – 0.1
 - (d) None
12. Which of the following sugar has bitter taste
 - (a) Glucose
 - (b) Sucrose
 - (c) Saccharine
 - (d) None
13. Which of the following is a synthetic sweetener
 - (a) Glucose
 - (b) Sucrose
 - (c) Sorbitol
 - (d) Aspartame
14. To increase the viscosity of liquid, which of the following agents are used
 - (a) PVP
 - (b) Methyl Cellulose
 - (c) Sodium Carboxy Methyl Cellulose
 - (d) All the above
15. Which of the following agents are used as flavoring agents
 - (a) Menthol
 - (b) Chloroform
 - (c) Both
 - (d) None
16. Most widely used flavoring agent in food industry
 - (a) Menthol
 - (b) Chloroform
 - (c) Mono sodium glutamate
 - (d) None
17. Which of the following flavor is not responsible for sour taste
 - (a) Citrus flavors
 - (b) Liquorice
 - (c) Raspberry
 - (d) Mint spice
18. The filling method of a pharmaceutical liquid depends on the following factors
 - (a) Viscosity of the liquid
 - (b) Surface tension of the liquid
 - (c) Compatibility with the materials used in the construction of the filling machine
 - (d) All the above
19. Which of the following methods are generally used in liquid filling
 - (a) Gravimetric
 - (b) Volumetric
 - (c) Constant level method
 - (d) All the above
20. In the formulation of suspensions, generally which types of drugs are selected?
 - (a) Hydrophilic
 - (b) Hydrophobic
 - (c) Both
 - (d) None
21. In the formulation, to facilitate the wetting of insoluble solids, which of the following agents used
 - (a) Suspending agents
 - (b) Flavoring agents
 - (c) Wetting agents
 - (d) None

22. How surfactants will facilitate or aid wetting of hydrophobic materials in liquid
- By decreasing the solid-liquid interfacial tension
 - By increasing the solid-liquid interfacial tension
 - Both
 - None
23. Stoke's equation is expressed as
- $V = \frac{2r^2(d_1 - d_2)g}{9\eta}$
 - $V = \frac{2r^2(d_1 - d_2)g}{18\eta}$
 - Both
 - None
24. The stability of suspensions can be evaluated by
- Sedimentation volume
 - Degree of flocculation
 - Re-dispersibility
 - All
25. To identify the emulsion type, which of the following tests are conducted?
- Dilution test
 - Dye test
 - Conductivity test
 - All
26. The temperature at which the inversion occurs depends on emulsifier concentration is known as
- Phase temperature
 - Inversion temperature
 - Phase inversion temperature
 - All
27. Which of the following mechanical equipment can be used for emulsification?
- Homogenizers
 - Mechanical stirrers
 - Ultra sonifiers
 - All
28. Which of the following is not used as an emulsifying agent?
- Surfactant
 - Hydrophilic colloids
 - Electrolytes
 - Finely divided solids
29. HLB system was developed by
- Griffin
 - Stock's
 - Dalla Valle
 - None
30. Gum Arabic is a
- Anionic polysaccharide
 - Cationic polysaccharide
 - Neutral polysaccharide
 - None

KEY

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|---------|---------|---------|---------|---------|
| 1. (a) | 2. (c) | 3. (a) | 4. (a) | 5. (d) |
| 6. (c) | 7. (c) | 8. (c) | 9. (c) | 10. (d) |
| 11. (a) | 12. (c) | 13. (d) | 14. (d) | 15. (c) |
| 16. (c) | 17. (d) | 18. (d) | 19. (d) | 20. (b) |
| 21. (c) | 22. (a) | 23. (b) | 24. (d) | 25. (d) |
| 26. (c) | 27. (d) | 28. (c) | 29. (a) | 30. (c) |

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1. Which of the following is not a semisolid dosage form
 - (a) Paste
 - (b) Creams
 - (c) Ointments
 - (d) Suspensions
2. Generally pastes contain
 - (a) High percentage of insoluble solids
 - (b) Low percentage of insoluble solids
 - (c) Both
 - (d) None
3. Most widely used hydrocarbon in semi-solid dosage forms
 - (a) Petrolatum
 - (b) Mineral oil
 - (c) Both
 - (d) None
4. Which of the following hydrocarbon waxes are employed in the manufacture of creams and ointments?
 - (a) Paraffin wax
 - (b) Ceresin
 - (c) Both
 - (d) None
5. Which of the following is not a vegetable oil
 - (a) Peanut oil
 - (b) Almond oil
 - (c) Olive oil
 - (d) Petrolatum
6. Which of the following fatty acid used in water removable creams as emulsifier
 - (a) Stearic acid
 - (b) Palmitic acid
 - (c) Both
 - (d) None
7. Combination of a surfactant with oil-soluble auxiliary emulsifier is known as
 - (a) Simple emulsifier system
 - (b) Mixed emulsifier system
 - (c) Both
 - (d) None
8. Promulgen means
 - (a) Anionic emulsifiers composed of fatty alcohols & their ethoxylates
 - (b) Non-ionic emulsifiers composed of fatty alcohols & their ethoxylates
 - (c) Cationic emulsifiers composed of fatty alcohols & their ethoxylates
 - (d) All the above
9. Promulgen D contains
 - (a) Cetyl alcohol & Cetareth-20
 - (b) Stearyl alcohol & Cetareth-20
 - (c) Both
 - (d) None
10. Promulgen G contains
 - (a) Cetyl alcohol & Cetareth-20
 - (b) Stearyl alcohol & Cetareth-20
 - (c) Both
 - (d) None
11. With promulgen D, which type of emulsion generally obtained?
 - (a) Liquid emulsion
 - (b) Thick consistency emulsion
 - (c) Both
 - (d) None
12. With promulgen G, which type of emulsion generally obtained?
 - (a) Liquid emulsion
 - (b) Thick consistency emulsion
 - (c) Both
 - (d) None
13. Which of the following polyols used as humectants in creams
 - (a) Glycerine
 - (b) Propylene glycol
 - (c) Sorbitol 70%
 - (d) All the above

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| <p>14. The choice of humectants is based on</p> <ul style="list-style-type: none"> (a) Rate of moisture exchange (b) Viscosity and texture of preparation (c) Both (d) None | <p>19. In the preparation of vanishing creams, which types of bases are used generally?</p> <ul style="list-style-type: none"> (a) Absorption bases (b) Water removable bases (c) Hydrocarbon bases (d) None |
| <p>15. Which of the following is more hygroscopic at low concentration?</p> <ul style="list-style-type: none"> (a) Sorbitol 70% (b) Glycerine (c) Both (d) None | <p>20. In the preparation of cold creams, which types of bases are used generally?</p> <ul style="list-style-type: none"> (a) Absorption bases (b) Water removable bases (c) Hydrocarbon bases (d) None |
| <p>16. Due to which factors, petrolatum is most widely used as a hydrocarbon basic in ointments</p> <ul style="list-style-type: none"> (a) Its consistency (b) Its neutral characteristics (c) Its ability to spread easily on the skin (d) All | <p>21. Water soluble bases are also known as</p> <ul style="list-style-type: none"> (a) Greasy ointment bases (b) Greaseless ointment bases (c) Both (d) None |
| <p>17. Water number means</p> <ul style="list-style-type: none"> (a) Maximum amount of water that can be added to 100 g of a base at given temperature (b) Maximum amount of water that can be added to 10 g of a base at given temperature (c) Maximum amount of water that can be added to 5 g of a base at given temperature (d) All | <p>22. In pastes, the concentration of insoluble powder substances in</p> <ul style="list-style-type: none"> (a) 20%-50% (b) 50%-100% (c) 50%-75% (d) None |
| <p>18. Lanolin is which type of base</p> <ul style="list-style-type: none"> (a) Hydrocarbon base (b) Absorption base (c) Both (d) None | <p>23. Jellies are generally</p> <ul style="list-style-type: none"> (a) Water-soluble bases (b) Water-insoluble bases (c) Both (d) None |
| | <p>24. As per USP XX, the term “objectionable” means</p> <ul style="list-style-type: none"> (a) An organism can cause disease or the presence may interrupt the function of the drug or lead to deterioration of the product |

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- (b) Pathogens if they produce disease or infection, in the newborn or debilitated persons
- (c) Organisms or their toxins that are responsible for human disease or infection
- (d) None
25. The success or failure of a preservative in protecting a formulation against microbial spoilage depends on
- (a) Interaction between preservative with surfactant
- (b) Interaction between preservative with active substances
- (c) Sorption by packaging materials
- (d) All the above

KEY

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|---------|---------|---------|---------|---------|
| 1. (d) | 2. (a) | 3. (c) | 4. (c) | 5. (d) |
| 6. (a) | 7. (b) | 8. (b) | 9. (a) | 10. (b) |
| 11. (b) | 12. (a) | 13. (d) | 14. (c) | 15. (a) |
| 16. (d) | 17. (a) | 18. (c) | 19. (b) | 20. (a) |
| 21. (b) | 22. (a) | 23. (a) | 24. (a) | 25. (d) |

1. A suppository is generally intended for use in
 - (a) Rectum
 - (b) Vagina
 - (c) Urethra
 - (d) All the above
2. Vaginal suppositories also called as
 - (a) Pessaries
 - (b) Simple suppositories
 - (c) Bougies
 - (d) None
3. "Oleum theobromae" was first recommended by
 - (a) A.B. Taylor (b) Griffin
 - (c) Stocks's (d) None
4. Weight of rectal suppository for adults is
 - (a) 1 g (b) 2 g
 - (c) 5 g (d) None
5. Weight of rectal suppository for children is
 - (a) 1 g (b) 2 g
 - (c) 5 g (d) None
6. Urethral suppositories also called as
 - (a) Pessaries (b) Bougies
 - (c) Both (d) None
7. Urethral suppositories having which shape
 - (a) Oviform shape
 - (b) Torpedo shape
 - (c) Pencil shape
 - (d) None
8. Weight of urethral suppository for males & females respectively
 - (a) 4 & 2 (b) 2 & 4
 - (c) 4 & 6 (d) 6 & 4
9. Shape of vaginal suppositories is
 - (a) Oviform shape
 - (b) Torpedo shape
 - (c) Pencil shape
 - (d) None
10. Rectal suppositories mainly used for the treatment of
 - (a) Constipation (b) Hemorrhoids
 - (c) Both (d) None
11. The number of milligrams of KOH required neutralizing free acids & saponify the esters contained in 1 g of fat is known as
 - (a) Iodine value
 - (b) Saponification value
 - (c) Water number
 - (d) Acid value
12. The number of grams of iodine that reacts with 100 g of fat is known as
 - (a) Iodine value
 - (b) Saponification value
 - (c) Water number
 - (d) Acid value
13. The number of milligrams of KOH required neutralizing free acids in 1 g of fat is known as
 - (a) Iodine value
 - (b) Saponification value
 - (c) Hydroxyl value
 - (d) Acid value
14. The number of milligrams of KOH required neutralize the acetic acid used to acetylate 1 g of fat is known as
 - (a) Iodine value
 - (b) Saponification value
 - (c) Hydroxyl value
 - (d) Acid value

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15. Which of the following method is used to manufacture suppositories
(a) Hand molding
(b) Compression molding
(c) Pour molding
(d) All the above
16. Which of the following is most commonly used suppository base
(a) Cocoa butter
(b) PEG 1000
(c) PEG + Hexanetriol
(d) None
17. Cocoa butter available in following forms
(a) α -form (b) β -form
(c) γ -form (d) All
18. The solidification point of cocoa butter lies between
(a) $12 - 13^\circ$ (b) $20 - 30^\circ$
(c) $5 - 10^\circ$ (d) None
19. Which of the following method is simple & oldest method of preparation of suppositories?
(a) Hand molding
(b) Compression molding
(c) Pour molding
(d) All the above
20. Most commonly used method for producing suppositories on both a small & large scale is
(a) Hand molding
(b) Compression molding
(c) Pour molding
(d) All the above
21. Which formula can be used to calculate the amount of base that is replaced by active ingredients?
(a) $f = \frac{100(G - E)}{(G)(X)} + 1$
(b) $f = \frac{100(E - G)}{(G)(X)} + 100$
(c) $f = \frac{100(E - G)}{(G)(X)} + 1$
(d) $f = \frac{100(E - G)}{(G)(X)} + 10$
22. Rancidity generally results from
(a) Auto oxidation
(b) Decomposition of unsaturated fats
(c) Both
(d) None
23. Which of the following is not antioxidant
(a) BHT (b) BHA
(c) Tocopherol (d) Theobroma oil
24. Suppositories are generally evaluated by
(a) Melting range test
(b) Breaking test
(c) Liquefaction
(d) All the above

KEY

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|---------|---------|---------|---------|---------|
| 1. (d) | 2. (a) | 3. (a) | 4. (b) | 5. (a) |
| 6. (b) | 7. (c) | 8. (a) | 9. (a) | 10. (c) |
| 11. (b) | 12. (a) | 13. (d) | 14. (c) | 15. (d) |
| 16. (a) | 17. (d) | 18. (a) | 19. (a) | 20. (c) |
| 21. (c) | 22. (c) | 23. (d) | 24. (d) | |

1. Which of the following materials are used in pharmaceutical packaging?
 - (a) Glass
 - (b) Plastic
 - (c) Metal
 - (d) All the above
2. Which of the following packaging material is protect the drug content against light
 - (a) Plastic containers
 - (b) Amber colored glass containers
 - (c) Both
 - (d) None
3. Major disadvantages of glass as a packing material are
 - (a) Fragility (b) Weight
 - (c) Both (d) None
4. Composition of glass is
 - (a) Sand
 - (b) Soda ash
 - (c) Lime stone & Cullet
 - (d) All the above
5. Soda ash also known as
 - (a) Pure silica
 - (b) Sodium carbonate
 - (c) Lime stone
 - (d) Calcium carbonate
6. Which of the following one is a broken glass & acts as fusion agent
 - (a) Cullet (b) Soda ash
 - (c) Lime stone (d) Sand
7. Which of the following methods are used in the production of glass
 - (a) Blowing
 - (b) Drawing
 - (c) Pressing & casting
 - (d) All the above
8. To produce molten glass, which of the following method is used
 - (a) Blowing (b) Drawing
 - (c) Pressing (d) Casting
9. To protect the contents of a bottle from the effects of sunlight by UV rays, which glass is used?
 - (a) Amber glass (b) Red glass
 - (c) Both (d) None
10. To evaluate the chemical resistance of glass, which of the following tests are conducted?
 - (a) Powder glass
 - (b) Water attack test
 - (c) Both
 - (d) None
11. Which of the following test is performed on crushed grains, to evaluate the chemical resistance of glass?
 - (a) Powder glass
 - (b) Water attack test
 - (c) Both
 - (d) None
12. Which of the following test is performed on whole container?
 - (a) Powder glass
 - (b) Water attack test
 - (c) Both
 - (d) None
13. Type I glass is also known as
 - (a) Borosilicate glass
 - (b) Regular soda-lime glass
 - (c) Treated soda-lime glass
 - (d) None

10 MCQs in Pharmaceutical Sciences

14. The advantages of plastic containers over glass containers are
(a) Easy formation
(b) Resistance to breakage
(c) Freedom of design
(d) All the above
15. Plastic containers are generally made from the following material
(a) Polyethylene
(b) Polypropylene
(c) Polystyrene
(d) All the above
16. Which of the following ingredients are present in rubber stopper?
(a) Vulcanizing agent
(b) Softner
(c) Antioxidant
(d) All the above
17. Which of the following packaging systems are identified by the FDA?
(a) Blister pack
(b) Strip pack
(c) Bubble pack
(d) All the above
18. Which of the following packaging is commonly used for packaging of tablets & capsules?
(a) Blister pack (b) Strip pack
(c) Both (d) None
19. Which of the following materials offer moisture barrier properties?
(a) Aclar
(b) Cellophane
(c) Polyester
(d) All the above
20. Which of the following mechanism is responsible for release of encapsulated core materials?
(a) By disrupting the coating by pressure
(b) By offering permeability facilities
(c) By leaching of permanent fluid
(d) All the above

KEY

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|---------|---------|---------|---------|---------|
| 1. (d) | 2. (b) | 3. (c) | 4. (d) | 5. (b) |
| 6. (a) | 7. (d) | 8. (a) | 9. (c) | 10. (c) |
| 11. (a) | 12. (b) | 13. (a) | 14. (d) | 15. (d) |
| 16. (d) | 17. (d) | 18. (b) | 19. (d) | 20. (d) |

1. Pre - formulation studies mainly focus on
 - (a) Physical properties of new compound
 - (b) Chemical properties of new compound
 - (c) Physico-chemical properties of new compound
 - (d) None
2. Which of the following information is helpful in designing the pre-formulation evaluation of a new drug?
 - (a) Structure of a compound
 - (b) Formula & molecular weight of a compound
 - (c) Therapeutic indication of a new compound
 - (d) All the above
3. Which of the following problems commonly encountered in evaluating salt forms are
 - (a) Poor crystallinity
 - (b) Hygroscopicity
 - (c) Instability
 - (d) All the above
4. Which of the following salts generally used in pharmaceutical products?
 - (a) Acetate
 - (b) Gluconate
 - (c) Lactate
 - (d) All the above
5. Description of the outer appearance of a crystal is known as
 - (a) Crystal habit
 - (b) Internal structure
 - (c) Both
 - (d) None
6. Which of the following techniques used to prepare amorphous forms?
 - (a) Rapid precipitation
 - (b) Lyophilization
 - (c) Rapid cooling
 - (d) All the above
7. Amorphous forms generally having
 - (a) Low thermodynamic energy & low solubility
 - (b) High thermodynamic energy & high solubility
 - (c) Both
 - (d) None
8. Which of the following compound possess high aqueous solubility's?
 - (a) Hydrates
 - (b) Anhydrates
 - (c) Both
 - (d) None
9. Which of the following properties may change with changing of the internal structure of a solid?
 - (a) Melting point
 - (b) Density
 - (c) Optical properties
 - (d) All the above
10. Which of the following methods generally used for studying solid forms?
 - (a) DSC
 - (b) XRD
 - (c) TGA
 - (d) All the above
11. Which of the following methods generally used to measure heat loss or gain within a sample?
 - (a) DSC
 - (b) DTA
 - (c) Both
 - (d) None

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12. Which of the following co-solvent can be used to increase the solubility of poor soluble drugs?
(a) Ethanol
(b) Propylene glycol
(c) Glycerin
(d) All the above
13. Partition co-efficient generally measures
(a) Drug's lipophilicity
(b) Ability of drug to cross cell membrane
(c) Both
(d) None
14. Dissolution of a drug particle is described by
(a) Noyes-Whitney equation
(b) Stock's equation
(c) Drag's equation
(d) None
15. The effect of temperature on drug stability can be described by
(a) Noyes-Whitney equation
(b) Stock's equation
(c) Arrhenius equation
(d) None

KEY

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|---------|---------|---------|---------|---------|
| 1. (c) | 2. (d) | 3. (d) | 4. (d) | 5. (a) |
| 6. (d) | 7. (b) | 8. (b) | 9. (d) | 10. (d) |
| 11. (c) | 12. (d) | 13. (c) | 14. (a) | 15. (d) |

1. Unequal distribution of color on a tablet, refers to
 - (a) Picking (b) Mottling
 - (c) Capping (d) Sticking
2. Match the following and find out the correct combination
 1. Capping
(P) Separation of a tablet into 2 or more layers
 2. Lamination
(Q) Unequal distribution of color on a tablet
 3. Mottling
(R) Separation of top/bottom crowns of a tablet from the main body
 4. Sticking
(S) Adherence of tablet material to the die wall
 - (a) 2-P, 3-Q, 1-R, 4-S
 - (b) 1-P, 2-Q, 3-R, 4-S
 - (c) 3-P, 1-Q, 2-R, 4-S
 - (d) 4-P, 1-Q, 3-R, 2-S
3. Which of the following one is responsible for sticking?
 - (a) Excessive moisture
 - (b) Low moisture
 - (c) Both
 - (d) None
4. Which of the following mixer is a first high shear powder blender/mixer
 - (a) Diosna mixer
 - (b) Littleford lodige mixer
 - (c) Plow mixer
 - (d) Gral mixer
5. If the dose of a drug is inadequate, then it generally requires the following one, to make up its bulk
 - (a) Binders
 - (b) Disintegrants
 - (c) Lubricants
 - (d) Diluents
6. The first and most widely used diluent in tablet formulation is
 - (a) Dextrose (b) Lactose
 - (c) MCC (d) Starch
7. Anhydrous lactose has the advantage over hydrous lactose
 - (a) Improved flow
 - (b) Absence of millard reaction
 - (c) Improved compressibility
 - (d) High microbial load
8. Which of the following is not a commercially available starch product?
 - (a) Sta-Rx 1500 (b) Celutab
 - (c) Emdex (d) Sugar tab
9. Which of the following is a synthetic adhesive?
 - (a) PVP (b) MC
 - (c) HPMC (d) HPC
10. Which of the following is a water soluble lubricant?
 - (a) Stearic acid
 - (b) Mineral oil
 - (c) PEG
 - (d) Magnesium stearate

14 MCQs in Pharmaceutical Sciences

11. Find out the correct statements regarding a sweetener, saccharin
(P) It is 500 times sweeter than sucrose, but it is carcinogenic
(Q) It is 500 times sweeter than sucrose, but it has bitter taste
(R) It is sweeter than sucrose, but it is safe
(S) It is sweeter than sucrose, but it is unstable
(a) P, S (b) P, R
(c) P, Q (d) R, S
12. Aerosil is used as
(a) Glidant (b) Lubricant
(c) Antiadherent (d) None
13. What is the pH of duodenum?
(a) 2-3 (b) 7-8
(c) 4-6 (d) 10
14. Tablets, which are placed between cheek and teeth, are known as
(a) Buccal (b) Sublingual
(c) Lozenges (d) Troches
15. Which statement is not correct?
(a) Buccal routes avoids first pass metabolism
(b) Parenteral route avoids first pass metabolism
(c) Sublingual route avoids first pass metabolism
(d) Oral route avoids first pass metabolism
16. Match the following ingredients according to their purpose in the formulation of tablets and find out the correct set
1. Glidant
(P) Pre- gelatinized starch
2. Diluent
(Q) Pyramine
3. Adherent
(R) Colloidal silica
4. Disintegrant
(S) Calcium sulphate
(T) Sodium alginate
(a) 1-R, 2-S, 3-P, 4-T
(b) 1-S, 2-R, 3-Q, 4-P
(c) 1-R, 2-S, 3-T, 4-Q
(d) 1-Q, 2-T, 3-R, 4-P
17. Enteric coating is achieved by using
(a) HPMC (b) CMC
(c) CAP (d) Povidine
18. The disintegration time for sugar coated tablets is
(a) 30 minutes (b) 45 minutes
(c) 60 minutes (d) 75 minutes
19. Flow rate of granules from the hopper can be improved by adding
(a) Disintegrant (b) Glidant
(c) Binder (d) Lubricant
20. Given below are equipment used in the manufacture of following products P-T. Match them and find out correct answer
1. Zenasi
(P) Tablet granules
2. Hepa filter
(Q) Tablet coating
3. Chilsonator
(R) Emulsion
4. Accela cota
(S) Injectables
(T) Capsule

- (a) 1-T, 2-S, 3-P, 4-Q
 (b) 1-P, 2-Q, 3-S, 4-R
 (c) 1-T, 2-R, 3-Q, 4-P
 (d) 1-S, 2-R, 3-P, 4-Q
21. Match the ingredients according to their purpose in the formulation and find out correct set
- Film coating
 (P) Sodium benzoate
 - Syrups
 (Q) Ethyl cellulose
 - Emulsification
 (R) Eudragit
 - Enteric coating
 (S) Sucrose
 (T) Sodium oleate
- (a) 1-P, 2-Q, 3-R, 4-S
 (b) 1-R, 2-S, 3-T, 4-Q
 (c) 1-T, 2-P, 3-S, 4-Q
 (d) 1-R, 2-S, 3-Q, 4-T
22. Match the following regions in GIT with the pH levels indicated from P-T and find out correct answer
- Mouth
 (P) 5-6
 - Stomach
 (Q) 6.8-7.5
 - Deodenum
 (R) 6.8-7
 - Large intestine
 (S) 3-5
 (T) 1.5-3
- (a) 1-Q, 2-T, 3-S, 4-R
 (b) 1-P, 2-R, 3-S, 4-T
 (c) 1-S, 2-T, 3-Q, 4-R
 (d) 1-R, 2-S, 3-T, 4-P
23. In sugar coating of tablets, sub- coating is done
- To prevent moisture absorption
 - To round the edge & build tablet size
 - To smoothen the surface
 - To prevent the tablet from breaking due to vibration
24. Some possible causes are mentioned in P-T, for the following defects during the film coating of tablets. Match them
- Chipping
 (P) Poor spreading during spraying
 - Cracking
 (Q) Over heating during spraying
 - Orange peel
 (R) Higher internal stresses in film
 - Blistering
 (S) Excessive coating process
 (T) Precipitation of polymer due to high temperature/poor solvent
- (a) 1-S, 2-R, 3-P, 4-Q
 (b) 1-T, 2-S, 3-R, 4-P
 (c) 1-P, 2-Q, 3-R, 4-S
 (d) 1-R, 2-P, 3-Q, 4-T
25. Sub coating is given to the tablets
- To increase the bulkiness
 - To avoid deterioration due to microbial attack
 - To prevent the solubility in acidic medium
 - To avoid stickness

26. The following ingredients are commonly used as coating agents for film coating except
(a) CAP
(b) Carnauba wax
(c) HEC
(d) Sodium CMC
27. The ingredients mentioned in P-S are used in various stages of sugar coating of tablets. Match them and find out correct answer
1. Seal coating
 (P) Gelatin
2. Sub coating
 (Q) Carnauba wax
3. Syrup coating
 (R) PEG 4000
4. Polyshing
 (S) Cane sugar
(a) 1-S, 2-P, 3-R, 4-Q
(b) 1-Q, 2-S, 3-R, 4-P
(c) 1-P, 2-Q, 3-R, 4-S
(d) 1-R, 2-P, 3-Q, 4-S
28. The courster process can be used to
(a) Coat tablets
(b) Determine the disintegration time
(c) Gas sterilize parenteral solution
(d) Automatic filling of capsules
29. Which of the following is the first process that must occur before a drug can become available for absorption from a tablet dosage form?
(a) Dissolution of the drug in GI fluids
(b) Dissolution of the drug in epithelium
(c) Ionization of the drug
(d) Disintegration of the drug
30. Tablets are placed into coating chamber & hot air is introduced through the bottom of the chamber. Coating solution is applied through an atomizing nozzle from the upper end of the chamber. This technique is called
(a) Sealing before sugar coating
(b) Coating by air suspension
(c) Spray-pan coating
(d) Chamber coating
31. A synthetic sweetening agent which is approximately 200 times sweeter than sucrose & has no taste is
(a) Saccharin (b) Aspartame
(c) Cyclamate (d) Sorbitol
32. Shellac is used the purpose of coating tablets as
(a) Polishing agent
(b) Film coating agent
(c) Enteric coating agent
(d) Sub-coating agent for sugar coating
33. Dose dumping is a problem in the formulation of
(a) Compressed tab
(b) Suppository
(c) Soft gelatin capsules
(d) Controlled release drug products
34. Select the equation that gives the rate of drug dissolution from a tablet
(a) Fick's law
(b) Henderson-Hasselbatch equation
(c) Noyes-Whitney equation
(d) Michelis Menton equation

35. Which of the following substance is used as muco adhesive
 - (a) Acacia
 - (b) Sodium CMC
 - (c) Burnt sugar
 - (d) Saccharin

36. In the preparation of multi layer tablets, one of the following is used for hydrophilic matrix coating
 - (a) Shellac
 - (b) CMC
 - (c) Stearyl alcohol
 - (d) Bees wax

37. The diameter of the mesh aperture in the I.P. disintegration apparatus is given below. Choose the correct size
 - (a) 2 mm (b) 4 mm
 - (c) 1mm (d) 1.50 mm

38. Diclofenac tablet with CAP has been administered to a patient. Where do you expect the drug to be released?
 - (a) Stomach (b) Oral cavity
 - (c) Small intestine (d) Liver

39. Which of the following flavor is used in a formulation containing sour taste?
 - (a) Wild cherry (b) Vanilla
 - (c) Citrus (d) Chocolate

40. Durability of a tablet to combined effects of shock & abrasion is evaluated by using
 - (a) Hardness tester
 - (b) Disintegration test apparatus
 - (c) Friabilator
 - (d) Screw guage

41. A retardant material that forms a hydrophilic matrix in the formulation of matrix tablets is
 - (a) HPMC
 - (b) CAP
 - (c) Polyethylene
 - (d) Carnauba wax

42. A water soluble substance used as coating material in micro encapsulation process is
 - (a) Polyethylene (b) Silicone
 - (c) HEC (d) Paraffin

43. One of the following is used as a p^H dependant controlled release excipient
 - (a) Carnauba wax
 - (b) HPMCP
 - (c) MC
 - (d) Glyceryl mono stearate

44. In the tablet coating process, inadequate spreading of coating solution before drying causes
 - (a) Orange peel effect
 - (b) Sticking effect
 - (c) Blistering effect
 - (d) Picking effect

45. Crown thickness of a tablet is measured by
 - (a) Micrometer
 - (b) Pycnometer
 - (c) Hydrometer
 - (d) All the above

46. Friabilator is operated at
 - (a) 100 RPM (b) 75 RPM
 - (c) 50 RPM (d) 25 RPM

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47. Enteric coated tablet disintegrate in hours in simulated intestinal fluid
(a) 1 (b) 2 (c) 2% w/v of methyl cellulose dispersion
(c) 3 (d) 4 (d) None
48. In dissolution test, flask is maintained at
(a) $37^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ (b) $41^{\circ}\text{C} \pm 1^{\circ}\text{C}$
(c) $39^{\circ}\text{C} \pm 0.6^{\circ}\text{C}$ (d) $40^{\circ}\text{C} \pm 1^{\circ}\text{C}$
49. Capping is prevented by using one of the following punches
(a) Flat (b) Circular
(c) Square (d) Rectangular
50. Plating of punch faces are done by
(a) Chromium (b) Zinc
(c) Iron (d) All
51. Sta-Rx-1500 contains% of moisture
(a) 15 (b) 10
(c) 18 (d) 50
52. Acacia tragacanth is used in the concentration of
(a) 10%-25 % (b) 60%-70 %
(c) 40%-50 % (d) 90%
53. Starch on heating hydrolyze into
(a) Glucose
(b) Fructose & Sorbose
(c) Fructose & Mannose
(d) Dextrin & Glucose
54. P^{H} of the small intestine is
(a) 1-2 (b) 3-4
(c) 6 (d) 7-8
55. Aqua coat is a
(a) 30% w/v of ethyl cellulose dispersion
(b) Solution of HPMC
56. Lozenges were originally named as
(a) Capsule
(b) ODT
(c) Pastillies
(d) Sustained axn tab
57. Implantation tab are NMT.....mm in length
(a) 20 (b) 100
(c) 40 (d) 8
58. Seal coating is done by using
(a) Shellac (b) Acacia
(c) Gelatin (d) None
59. Sub coating is done to
(a) Round the edges
(b) Increase the bulk of tablet
(c) Both a & b
(d) Make water resistant
60. CAP dissolves at P^{H}
(a) Above 6 (b) Below 6
(c) 4 (d) 2
61. Which of the following one is used as opacifier
(a) TiO_2
(b) Mgo
(c) Siliactes
(d) All of the above
62. Green bone is a source of
(a) Type A Gelatin
(b) Type B Gelatin
(c) Both
(d) None

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| <p>63. Empty capsule has moisture content in the range of
 (a) 60% (b) 12%-15 %
 (c) 50%- 70% (d) 30%</p> <p>64. Which treatment is used for solubility of gelatin
 (a) Heat (b) Formalin
 (c) Water (d) Alcohol</p> <p>65. Which of the following is used to fill powdered dry solid into soft gelatin capsule
 (a) Aceo gel (b) Rotobil
 (c) Rotosort (d) Rotoweigh</p> <p>66. Sealing of capsule is achieved by
 (a) 100°C (b) 20°C
 (c) 37°C-40°C (d) 70°C</p> <p>67. Moisture content is determined by
 (a) Gas Chromatography
 (b) K-F Method
 (c) Both
 (d) None</p> | <p>68. Foam stability is measured by
 (a) IR Spectroscopy
 (b) UV Spectroscopy
 (c) Rotational viscometers
 (d) All</p> <p>69. Particle size is determined by
 (a) Gas Chromatography
 (b) Cascade impactor
 (c) Light scatter decay
 (d) Both b & c</p> <p>70. Chewable tablet contains the following base
 (a) Mannitol (b) Glucose
 (c) Lactose (d) None</p> <p>71. Which of the following is not added in lozenges?
 (a) Sweetener (b) Binder
 (c) Disintegrant (d) All</p> <p>72. Enteric coated tablet is disintegrated in
 (a) Stomach (b) Liver
 (c) Intestine (d) Mouth</p> |
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KEY

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|---------|---------|---------|---------|---------|
| 1. (b) | 2. (c) | 3. (a) | 4. (b) | 5. (d) |
| 6. (b) | 7. (b) | 8. (d) | 9. (a) | 10. (c) |
| 11. (c) | 12. (a) | 13. (c) | 14. (a) | 15. (d) |
| 16. (a) | 17. (c) | 18. (c) | 19. (b) | 20. (a) |
| 21. (b) | 22. (a) | 23. (b) | 24. (a) | 25. (d) |
| 26. (b) | 27. (a) | 28. (a) | 29. (d) | 30. (b) |
| 31. (b) | 32. (c) | 33. (d) | 34. (c) | 35. (b) |
| 36. (a) | 37. (a) | 38. (c) | 39. (c) | 40. (c) |
| 41. (a) | 42. (c) | 43. (d) | 44. (a) | 45. (b) |
| 46. (a) | 47. (b) | 48. (a) | 49. (a) | 50. (a) |

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|---------|---------|---------|---------|---------|
| 51. (b) | 52. (a) | 53. (d) | 54. (d) | 55. (b) |
| 56. (c) | 57. (c) | 58. (a) | 59. (c) | 60. (a) |
| 61. (a) | 62. (b) | 63. (c) | 64. (b) | 65. (a) |
| 66. (c) | 67. (b) | 68. (c) | 69. (d) | 70. (a) |
| 71. (c) | 72. (c) | | | |

1. Department of Transport Test (DOT) is performed for which of the following?
 - (a) Aerosols
 - (b) Glass containers
 - (c) Capsules
 - (d) None
2. Measurement of particle size in pharmaceutical aerosol is by
 - (P) Cascade impactor
 - (Q) Light scatter decay
 - (R) K-F method
 - (S) IR
 - (a) P, Q (b) Q, R
 - (c) R, S (d) P, S
3. Identify the correct non-flammable propellant
 - (a) Trichloro monofluoro methane
 - (b) Dichloro monofluoro methane
 - (c) Di methyl ether
 - (d) Di fluoro methane
4. The dip tube in an aerosol container is made from one of the following
 - (a) Poly propylene
 - (b) Glass
 - (c) Al
 - (d) Stainless steel
5. Which one of the following device is used to increase the efficiency of drug delivery via aerosols?
 - (a) Tube spacers
 - (b) Metered valves
 - (c) Actuator
 - (d) Pressure valve
6. The first aerosol insecticide was developed by
 - (a) Good-hue & Sullivan
 - (b) Good-hue
 - (c) Sullivan
 - (d) Franklin
7. The first pharmaceutical aerosol was developed in the year of
 - (a) 1945 (b) 1949
 - (c) 1955 (d) 1960
8. Which drug is formulated as first pharmaceutical aerosol?
 - (a) Epinephrine
 - (b) Codeine
 - (c) Chlorpromazine
 - (d) Probenecid
9. To dispense inhalation aerosols, which containers are used?
 - (a) Stain less steel containers
 - (b) Tin plate containers
 - (c) Glass containers
 - (d) Al containers
10. The valve body /housing in a aerosol bottle valve assembly, is made from one of the following
 - (a) Nylon
 - (b) Poly propylene
 - (c) Poly ethylene
 - (d) Stain less steel
11. The equipment listed P-T is used for the identification of properties of aerosol mentioned below. Match them.
 1. Particle size determination
(P) Pycnometer
 2. Identification of propellants
(Q) Rotaional viscometer
 3. Stability of foam
(R) Tag open cap apparatus

4. Flash point
(S) IR spectroscopy
(T) Cascade impaction
(a) 1-P, 2-Q, 3-R, 4-S
(b) 1-Q, 2-P, 3-S, 4-T
(c) 1-T, 2-S, 3-Q, 4-R
(d) 1-R, 2-S, 3-P, 4-Q
12. Match the coatings given below with their corresponding techniques listed P-T
1. Compression coating
(P) Air in the coating pan is replaced with Nitrogen
 2. Dip coating
(Q) Application of coating to conductive substrates
 3. Electrostatic coating
(R) Acid insoluble coating
 4. Vacuum film coating
(S) A tablet within a tablet
(T) Replaced coating & drying
- (a) 1-T, 2-R, 3-Q, 4-P
(b) 1-Q, 2-R, 3-S, 4-T
(c) 1-P, 2-R, 3-T, 4-S
(d) 1-R, 2-T, 3-P, 4-Q
13. Among the propellants used in aerosols, one of the following is used for topical pharmaceutical aerosols
(a) Tri chloro monofluoro methane
(b) Di chloro difluoro methane
(c) Di chloro tetrafluoro ethane
(d) Propane
14. Which one of the following propellant is used in the aerosol for oral use
(a) Propane
(b) Oxygen
(c) Methane
(d) Trichloro monofluoro methane
15. The identification of propellants in pharmaceutical aerosols is carried out by
(P) Gas chromatography
(R) Pycnometer
(Q) Tag open cup apparatus
(S) IR spectrophotometer
(a) P,Q (b) P,S
(c) Q, R (d) R, S
16. Aerosol packaging container must resist pressure of
(a) 500 psig
(b) 140-180 psig
(c) 40 psig
(d) 20 psig
17. Gasket is made up of
(a) Bure-N
(b) Neoprene rubber
(c) Both
(d) All
18. Manufacturing of aerosol involves
(a) Gas filling
(b) Pressure filling
(c) Compressed gas filling
(d) All the above
19. The nature of propellant is determined by
(a) R-F method
(b) Gas Chromatography
(c) UV
(d) None
20. Viscosity enhancer in ophthalmic preparation is
(a) Poly vinyl alcohol
(b) Povidone
(c) Dextran
(d) Macrogol

21. p^H of human tear is
(a) 7.2 (b) 8
(c) 7.6 (d) 4.6
22. Ophthalmic solution is sterilized by
(a) Autoclave
(b) Hot air oven
(c) Both
- (d) Bacterial filters
23. Which of the following one is used to adjust the isotonicity
(a) Dextrose
(b) Boric acid
(c) NaCl
(d) All the above

KEY

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|---------|---------|---------|---------|---------|
| 1. (a) | 2. (a) | 3. (a) | 4. (a) | 5. (b) |
| 6. (a) | 7. (c) | 8. (a) | 9. (a) | 10. (a) |
| 11. (c) | 12. (a) | 13. (d) | 14. (d) | 15. (b) |
| 16. (b) | 17. (c) | 18. (c) | 19. (b) | 20. (d) |
| 21. (c) | 22. (a) | 23. (d) | | |